ELECTRONIC DEVICE PRECISION LOCATION VIA LOCAL BROADCAST SIGNALS

ABSTRACT

A location determination apparatus, method and system (10, 23, 26, 32, 36, 48, 52, 60, 64, 74, 78, 84, 90, 106) that is an improvement upon existing location determining techniques. The invention enables precision indoor location determination through the use of non-DTV terrestrial broadcast signals (e.g. one way, wide area, dissemination of information)(20), or re-broadcast signals (44, 56, 70, 80) of the proposed (terrestrial based) digital satellite radio relay transmitters (42, 54) to provide position location. This solution does not require a local receiver to correct for long distance propagation dispersion, particularly for the satellite relay, as the digital radio satellites are already synchronized to GPS time. More specifically, the invention discloses two significant location detection concepts: A) local terrestrial transmitters (12) provide information used to determine the location of an electronic apparatus; and B) local re-transmitters of satellite-distributed programming (42, 54) provide information used to determine the location of an electronic apparatus.
